QC ABSTRACT

NAME OF WORK: Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Block(400*200*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1
6	KERB	Core Compressive strength	One Test		1	1
		Corrected Cylinder Compressive strength	One Test		1	1
		Equivalent Cube Compressive strength	One Test		1	1
7	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
8	PCC(M15)	Compressive Strength(7days and 28days)	3 set /16-30 cum	25	6	6

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2021-09-15-17** **Date: 15-07-21**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer's Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-07-21
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	13-07-21
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.08	–
2	Finess by Air permeablity method (m^2/kg,Min)	298.5	225m^2/kg, Min
3	Density (gm/cc)	3.13	–
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	275 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Authorized Signatory
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Assistant Executive Engineer
Vidyaranyapura Sub Division
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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2021-09-15-17** **Date: 10-08-21**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer's Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-07-21
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	13-07-21
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2021-09-15-17** **Date: 15-07-21**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer's Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	12-07-21
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	12-07-21

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	189	189	1.3	98.7	90-100
3	20 mm	7284	7473	49.8	50.2	30-70
4	10 mm	4089	11562	77.1	22.9	10-35
5	4.75 mm	3001	14563	97.1	2.9	0-5
6	Pan	437	15000	100.0	0	---

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BBMP, Bangalore - 97

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2021-09-15-17** **Date: 15-07-21**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**11.5**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**12.8**	
3	Specific Gravity	**2.66**	_
4	Bulk Density(Loose) (Kg/l)	**1.42**	_
5	Bulk Density(Compacted) (Kg/l)	**1.48**	_
6	Water Absorption(%)	**0.21**	_

* The results obtained are satisfactory as per standard requirements.

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Technical Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2021-09-15-17** **Date: 14-07-21**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-07-21
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	12-07-21

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	199	199	4.0	96.0	90-100
3	10 mm	3050	3249	65.0	35.0	25-55
4	4.75 mm	1502	4751	95.0	5.0	0-10
5	Pan	249	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2021-09-15-17** **Date: 14-07-21**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.7	
3	Specific Gravity	2.62	_
4	Bulk Density(Loose) (Kg/l)	1.48	_
5	Bulk Density(Compacted) (Kg/l)	1.55	_
6	Water Absorption(%)	0.27	_
7	Aggregate crushing Value(%)	23.9	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.1	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2021-09-15-17** **Date: 14-07-21**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer's Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-07-21
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	12-07-21
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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BBMP, Bangalore - 97

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2021-09-15-17** **Date: 14-07-21**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	_
2	Specific Gravity	2.59	_
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Technical Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
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TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2021-09-15-17** **Date: 26-07-21**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.

Agency : Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.

Customer's Reference : BBMP/EE/BTP/WO/122/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 22-07-21

Sample Type /Size : Precast Cover Slab (100mm)

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 22-07-21

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.48	1.116	4477	79.5	17.8	16.5	20.6
2	Cover Slab-2	75.49	100.52	1.122	4475	78.6	17.6	16.3	20.4
3	Cover Slab-3	75.50	100.51	1.118	4476	76.9	17.2	16.0	20.0

* The results obtained are satisfactory as per standard requirements.

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Technical Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID	:	**CP-2021-09-15-17** **Date: 31-07-21**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer's Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	27-07-21
Sample Type /Size	:	CC Kerb Stone/ 450*165*400mm
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	27-07-21

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm2)	(N/mm2)	(N/mm2)
1	A	100.01	165.51	2.864	7854	140.5	17.9	17.9	22.4
2	B	100.03	165.49	2.793	7857	139.6	17.8	17.8	22.2
3	C	100.01	165.50	2.815	7854	138.9	17.7	17.7	22.1

* The results obtained are satisfactory as per standard requirements.

Note:

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Authorized Signatory
Technical Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2021-09-15-17** **Date: 10/08/2021**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer's Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	05-08-21
Customer ID	:	Bed Concrete
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M15 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	10/08/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Bed Concrete	M15	03/08/2021	10/08/2021	149.79 X 149.59 X 150.52	22406	**8.212**	277.5	12.4	12.4
2	Bed Concrete	M15	03/08/2021	10/08/2021	150.65 X 149.84 X 151.68	22573	**8.918**	279.8	12.4	
3	Bed Concrete	M15	03/08/2021	10/08/2021	151.87 X 149.17 X 150.19	22654	**8.710**	282.2	12.5	

* The results obtained are satisfactory as per standard requirements.

Note:

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Technical Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-09-15-17** **Date: 31/08/2021**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.

Agency : Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.

Customer's Reference : BBMP/EE/BTP/WO/122/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 05-08-21

Customer ID : Bed Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 31/08/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Bed Concrete	M15	03/08/2021	31/08/2021	149.26 X 149.28 X 151.79	22282	**8.679**	381.1	17.1	17.1
2	Bed Concrete	M15	03/08/2021	31/08/2021	149.70 X 150.09 X 149.64	22468	**8.276**	388.2	17.3	
3	Bed Concrete	M15	03/08/2021	31/08/2021	151.92 X 150.52 X 149.99	22868	**8.311**	389.5	17.0	

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Technical Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-09-15-17** **Date: 10/08/2021**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.

Agency : Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.

Customer's Reference : BBMP/EE/BTP/WO/122/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 05-08-21

Customer ID : Bed Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 10/08/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Bed Concrete	M15	03/08/2021	10/08/2021	151.43 X 149.79 X 151.06	22683	**8.626**	284.3	12.5	12.7
2	Bed Concrete	M15	03/08/2021	10/08/2021	149.38 X 151.23 X 149.04	22591	**8.856**	292.3	12.9	
3	Bed Concrete	M15	03/08/2021	10/08/2021	149.97 X 149.81 X 150.75	22467	**8.946**	281.2	12.5	

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-09-15-17** **Date: 31/08/2021**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.

Agency : Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.

Customer's Reference : BBMP/EE/BTP/WO/122/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 05-08-21

Customer ID : Bed Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 31/08/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Bed Concrete	M15	03/08/2021	31/08/2021	150.61 X 151.44 X 150.82	22809	**9.041**	403.8	17.7	17.6
2	Bed Concrete	M15	03/08/2021	31/08/2021	151.89 X 149.21 X 151.42	22663	**8.912**	406.4	17.9	
3	Bed Concrete	M15	03/08/2021	31/08/2021	149.19 X 150.61 X 151.01	22470	**8.576**	384.5	17.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-09-15-17** **Date: 25/08/2021**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.

Agency : Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.

Customer's Reference : BBMP/EE/BTP/WO/122/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-08-21

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 25/08/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	18/08/2021	25/08/2021	151.84 X 151.94 X 150.12	23070	8.877	282.6	12.3	12.3
2	Coping Concrete	M15	18/08/2021	25/08/2021	151.12 X 151.14 X 149.69	22841	8.627	278.7	12.2	
3	Coping Concrete	M15	18/08/2021	25/08/2021	149.01 X 151.98 X 150.68	22647	8.909	284.2	12.5	

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-09-15-17** **Date: 15/09/2021**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.

Agency : Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.

Customer's Reference : BBMP/EE/BTP/WO/122/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-08-21

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 15/09/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	18/08/2021	15/09/2021	150.68 X 150.79 X 150.82	22721	**8.680**	402.2	17.7	17.8
2	Coping Concrete	M15	18/08/2021	15/09/2021	149.09 X 151.50 X 149.86	22587	**8.752**	404.8	17.9	
3	Coping Concrete	M15	18/08/2021	15/09/2021	151.84 X 151.73 X 151.41	23039	**8.569**	408.5	17.7	

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2021-09-15-17** **Date: 21-07-21**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Development of Footpath in Ward No - 11 (Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Sri.Manjegowda.V.Patil, #17, 1st Floor , 1st A Main Road, Kanakanagara, R.T.Nagara (P) Bangalore - 560032.
Customer's Reference	:	BBMP/EE/BTP/WO/122/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	17-07-21
Sample Type/Size	:	Solid concrete blocks size (400X200X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex - C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	17-07-21

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	398	199	199	15761	33.914	2151.8	2034.9	Not less than 1800Kg/m^3
2	401	199	199	15880	31.474	1982.0		
3	401	203	200	16281	32.088	1971.0		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	33.91	32.25	4.89	4.25	Shall not be more than 10% by mass
2	33.57	32.14	4.28		
3	33.44	32.24	3.59		

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Lab ID : CP-2021-09-15-17 Date: 21-07-21

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	400	201	203	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	401	201	201	
3	403	200	199	
4	400	201	201	
5	402	202	201	
6	401	202	200	
7	401	201	200	
8	404	201	202	
9	399	199	203	
10	401	201	202	
11	401	202	202	
12	400	201	201	
13	400	200	199	
14	400	202	202	
15	403	201	199	
16	401	201	201	
17	402	201	201	
18	400	203	202	
19	402	199	199	
20	401	203	202	
Average of 20	**401**	**201**	**201**	

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Lab ID : **CP-2021-09-15-17** **Date: 21-07-21**

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	400	201	80225	354.7	4.4	4.4
2	401	201	80437	355.4	4.4	
3	403	200	80763	355.5	4.4	
4	400	201	80324	349.3	4.3	
5	402	202	81042	355.7	4.4	
6	401	202	81125	352.2	4.3	
7	401	201	80379	346.1	4.3	
8	404	201	81055	346.2	4.3	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	**Minimum average**	**Minimum Individual units.**
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

* The Results Obtained are Satisfactory as per Standard Requirements

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